Financial Feasibility of Service-Based Business: A Case Study of Mengasihi Group

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Abstract

In Indonesia, over 6,300,000 toddlers are affected by stunting. Research indicates that the prevalence of stunting among children of working mothers is 30.6%. Despite the associated health risks, many working mothers prefer formula milk as a substitute for breast milk. Mengasihi, a health technology start-up providing breast milk powdering services for personal use, aims to offer babies a simple and effective nutritional solution. This study investigates the financial feasibility of Mengasihi as an early-stage start-up. It was found that cash flow plays a crucial role in start-up failure, impacting long-term organizational success. A feasibility study assessed Mengasihi’s financial viability, analyzing internal and external financial conditions using criteria such as Payback Period, Net Present Value (NPV), and Internal Rate of Return (IRR) based on five-year financial projections. The results indicate that the Mengasihi project is financially viable, and an implementation plan was provided as part of the study.

Keywords: Financial Feasibility, Financial Statement, Health Technology Business, Mothercare

A. INTRODUCTION

In a 2018 study by the United Nations International Children’s Emergency Fund (UNICEF), it was reported that 1 in 4 children under the age of five globally suffers from stunting. Of the 149 million children affected worldwide, Indonesia has 6.3 million children under five experiencing stunting. The World Health Organization (WHO) estimates that the global prevalence of stunting will be 22.3% in 2022. Research indicates that the prevalence of stunting among children of working mothers is 30.9%. In Indonesia, working mothers often turn to formula milk due to time constraints, as they may struggle to allocate sufficient time for direct breastfeeding. Formula milk is perceived as a more convenient and practical alternative, allowing mothers to manage feeding schedules more easily.

However, formula milk poses significant risks. Research indicates that toddlers consuming over 100 grams of formula milk daily for seven consecutive days are more likely to be overweight. Additionally, formula milk is associated with a 625% higher risk of diarrhea in babies aged 0-6 months compared to those exclusively breastfed—moreover, 30.2% of babies receiving formula milk experience respiratory tract infections. Breastfeeding, on the other hand, offers substantial health benefits, including a 390% reduction in the risk of death from diarrhea and a 240% reduction in acute respiratory infections (ARI). Babies exclusively breastfed have a 2500% lower risk of dying in their first month compared to those fed alternatives. Exclusive breastfeeding also lowers the risk of ear infections, food allergies, anemia, and obesity later in life. Formula milk should only be used if specific medical conditions or circumstances make breastfeeding impossible, as breast milk provides more significant benefits.

This research aims to evaluate the financial feasibility of Mengasihi, a start-up offering breast milk powdering services, within Indonesia’s maternal and child health market. The study will analyze its financial viability since Mengasihi is a relatively new service in Indonesia and faces no direct competition. Figure 1 illustrates the conceptual framework for this research. The analysis begins with examining Mengasihi’s business activities and assessing its internal and external environment. This approach will generate a comprehensive pro forma financial report, which will be evaluated using criteria such as payback period, net present value (NPV), and internal rate of return (IRR). These calculations will be iteratively refined until the results meet the required standards. Once the financial feasibility is confirmed, an implementation plan for the Mengasihi project will be developed. After determining financial viability and creating the implementation plan, conclusions and recommendations will be formulated.

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The company's internal analysis will assess Mengasihi's internal resources and capabilities, which are essential for executing the project. This analysis will employ two key frameworks: TOWS analysis and VRIO analysis. TOWS analysis will help identify and address internal strengths and weaknesses concerning external opportunities and threats. VRIO analysis will evaluate Mengasihi's resources and capabilities based on four criteria: Value, Rarity, Imitability, and Organization, to determine their potential for achieving a sustainable competitive advantage.

According to (Wheelen and Hunger, 2017), the TOWS matrix is a tool organizations use to identify internal and external factors critical to their success. TOWS analysis helps organizations systematically evaluate their Strengths, Weaknesses, Opportunities, and Threats (SWOT) to understand better how these factors can impact their strategic decision-making and overall performance. This analysis provides valuable insights by linking internal capabilities with external conditions, enabling organizations to leverage their strengths, address weaknesses, capitalize on opportunities, and mitigate threats.

The VRIO framework is valuable for assessing an organization's resources and capabilities to determine if they provide a competitive advantage over direct and indirect competitors. According to (Mauborgne and Porter, 1997), the VRIO framework is used to evaluate whether organizational assets are Valuable, Rare, Inimitable, and Organized. This framework helps organizations develop effective strategies by identifying whether their resources can deliver sustained competitive advantages. The VRIO framework is instrumental in evaluating and enhancing an organization's market competitiveness and applies to companies at various stages, including early and growth stages.

The company's external analysis section will identify market demand and assess competition, including direct and indirect competitors. This analysis will utilize two key frameworks: Porter's Five Forces and PESTLE. Porter's Five Forces framework will help evaluate the competitive dynamics within the industry by examining the intensity of rivalry, threat of new entrants, threat of substitutes, bargaining power of buyers, and bargaining power of suppliers. The PESTLE framework will provide insights into the broader macro-environmental factors—Political, Economic, Social, Technological, Legal, and Environmental—that can impact the market and the company's strategic positioning.

(Porter, 1980) described Porter's Five Forces as a framework for organizations to understand the industry's competitive dynamics, enhance their strengths, attract customers, and achieve profitability. This framework analyzes five key forces: the threat of new entrants, the threat of substitutes, the bargaining power of buyers and suppliers, and the rivalry among existing competitors. By applying Porter's Five Forces, Mengasihi can identify strategic opportunities and challenges, enabling the formulation of effective strategies to gain a competitive advantage in the market.

PESTLE analysis is a framework used to evaluate an organization's external environment. According to Perera (2018), PESTLE analysis helps identify opportunities and threats within an industry sector by examining external influences. This framework assesses six key areas: Political, Economic, Social, Technological, Legal, and Environmental factors (CIPD, 2021). By using the PESTLE approach, organizations can gain a
comprehensive understanding of various external factors, facilitating the anticipation of challenges and the development of effective strategies to navigate their environment.

Financial Statement Analysis

A financial statement is a document that provides a comprehensive overview of an organization's economic condition over a specific accounting period. It typically consists of four key components: the balance sheet, the profit and loss statement, the retained earnings statement, and the cash flow statement. These components are accompanied by explanatory notes to provide further context and details (Gitman & Zutter, 2015).

A balance sheet summarizes an organization's financial position at a specific time (Gitman & Zutter, 2015). Unlike other financial reports that cover a period, a balance sheet offers a snapshot of financial status as of a particular date. The fundamental equation of a balance sheet is Assets = Liabilities + Equity. This document is essential for organizations as it reveals their financial position at a given moment, comprising assets, liabilities, and equity (Maulida, 2022). Assets indicate the wealth of an organization and are categorized into tangible and intangible assets. Tangible assets are divided into current assets, such as cash, inventory, equipment, and receivables, and non-current assets, including buildings, vehicles, and other long-term physical resources. Intangible assets encompass non-physical resources like copyrights, patents, and goodwill, which hold economic value. Liabilities reflect the obligations an organization must settle within a certain period and are classified into short-term liabilities, due within one year, and long-term liabilities, due after more than one year. Equity represents the value of assets owned by the organization's owners or investors and can increase through additional investments or decrease due to losses or withdrawals of ownership funds, also known as "prive" (Rukmana, 2021).

An income statement is a financial document that summarizes an organization's operational activities over a specific period, typically one fiscal year (Gitman & Zutter, 2015). It provides insight into whether the organization achieved a profit or incurred a loss during that period. The income statement includes key components such as income, cost of goods sold, operating expenses, interest expenses, taxes, and preferred stock dividends. It begins with total revenue and subtracts the cost of goods sold to determine the gross profit. Operating expenses are deducted from gross profit to yield operating profit. Interest expenses are then subtracted from operating profit to calculate profit before tax. Finally, taxes are deducted from profit before tax to determine the net profit. This process allows for a comprehensive assessment of the company's profitability over the specified period.

Cost of Capital Analysis

The cost of capital is a crucial consideration for investors when financing a new business opportunity. Businesses that achieve a rate of return exceeding the cost of capital enhance their value as the investment's returns surpass the cost incurred. Organizations typically rely on three primary sources of capital: long-term debt, preferred shares, and equity shares. As a start-up in its early stages, Mengasihi is exploring various funding options, including long-term debt and preferred shares, to support its growth and development. Long-term debt costs refer to the after-tax cost incurred when obtaining long-term funds through borrowing. This cost may arise when an organization raises capital by issuing its bonds. Early-stage start-ups typically do not finance their operations using this option.

The cost of equity, or common stock, is the return investors require on their investment in the company's stock (Gitman & Zutter, 2015). Calculating this cost involves determining the stock's beta, which measures the stock's sensitivity to market movements and reflects the risk directly related to the company's operations. For private companies, beta is typically estimated based on the average beta of similar public companies within the same or related industry, assuming that the private company's beta will align with the industry average (Kvilhaug, 2022). Since Mengasihi is an early-stage start-up and is not publicly traded, calculating its Weighted Average Cost of Capital (WACC) necessitates using beta values from comparable companies in the industry. According to (Rowland et al., 2002), the cost of capital represents the minimum return required from a project to maintain the company's market value unchanged. The Weighted Average Cost of Capital (WACC) reflects the anticipated average cost of capital over the long term. WACC is calculated by weighting the cost of each type of capital according to its proportion in the company's capital structure (Gitman & Zutter, 2015). This involves multiplying the cost of each financial source by its weight or proportion and summing these weighted values.

The resulting WACC value is then compared to the Internal Rate of Return (IRR). A company is deemed profitable if its IRR exceeds the WACC, as this indicates that the returns generated by the company surpass its cost of capital.
Financial Feasibility

Financial feasibility analysis is essential for determining whether a project is financially viable. According to Ichsan et al. (2019), financial feasibility focuses on profitability and sustainability, which are assessed through the analysis of financial statements, including the balance sheet, income statement, and cash flow statement. This analysis aims to evaluate whether the project meets the established investment criteria. This involves collecting and analyzing financial data while considering the technical aspects of financial statements (Khaled, 2019). Companies typically use three key metrics to assess financial feasibility: Payback Period (PP), Net Present Value (NPV), and Internal Rate of Return (IRR).

The financial viability of an organization must account for the time value of money, which is based on the principle that receiving money sooner is more advantageous than receiving it later (Gitman & Zutter, 2015). This concept allows organizations to evaluate money's present or future value, considering relevant interest rates (Rowland et al., 2002). The two key concepts related to the time value of money are future value and present value.

Future value represents the amount of money at a specified future date resulting from investment activities today, assuming interest accrues at a particular rate. The formula used to calculate future value is:

\[ FV = PV \times (1 + r)^n \]

FV is the future value, PV is the present value, r is the interest rate, and n is the number of periods. On the other hand, present value is the current money worth to be received in the future. It helps determine how much must be invested today at a specific interest rate to match the future amount. The formula for calculating the present value is:

\[ PV = \frac{FV}{(1 + r)^n} \]

NPV signals that the organization is not creating value for its shareholders and stakeholders. Conversely, a positive NPV occurs when a project's income exceeds expected costs (NPV ≥ 0). This positive value indicates that the investment has a favorable profit potential for investors and stakeholders. The NPV formula is:

\[ NPV = \sum_{t=0}^{n} \frac{CF_t}{(1 + r)^t} \]

where CF_t represents the cash flow at time t, r is the discount rate, and n is the number of investment periods.

According to (Rowland et al., 2002), the payback period measures the time required to recover the initial investment value. It represents the duration a company needs to recoup its initial investment in a project (Gitman & Zutter, 2015). (Kagan, 2003) notes that a shorter payback period enhances the attractiveness of an investment. Although the payback period does not account for the time value of money, it can be a useful metric to support decisions alongside Net Present Value (NPV) or Internal Rate of Return (IRR) criteria. This calculation helps companies or investors make quick decisions regarding investments by providing a straightforward measure of how long it will take to recover the initial outlay.

The Internal Rate of Return (IRR) is a method used to evaluate project cash flows and is defined as the discount rate at which the Net Present Value (NPV) of a project equals zero (Rowland et al., 2002). A negative NPV indicates that the project's rate of return falls short of the expected value, suggesting that the project has failed to generate value (Gitman & Zutter, 2015). A negative NPV signals that the organization is not creating value for its shareholders and stakeholders. Conversely, a positive NPV occurs when a project's income exceeds expected costs (NPV ≥ 0). This positive value indicates that the investment has a favorable profit potential for investors and stakeholders.

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often preferred by business practitioners who favor measuring investment returns in dollar terms. NPV, while providing absolute value contributions, does not highlight the relative benefits of the investment amount, making IRR a more favored metric in practical scenarios.

B. RESEARCH METHOD

The data sources for this research include both primary and secondary data. Primary data will consist of various historical documents from Mengasihi, covering the development period 2022 to 2024. Secondary data will be sourced from academic journals, government websites, and reputable books. This combination of primary and secondary data will serve as the foundational basis for conducting the financial feasibility analysis in this research. Primary data will consist of information collected directly from individuals in the relevant industries and from historical documents related to Mengasihi's start-up development between 2022 and 2024. This data is crucial for conducting a detailed financial feasibility analysis for the research.

Secondary data will encompass information that serves as a basis for making business decisions or conducting analyses. This research will use secondary data from academic journals, official government websites, trusted books, and other relevant sources to complement and support the primary data collected.

C. RESULTS AND DISCUSSION

Business Solution Alternatives

A comprehensive analysis of financial reports will be conducted to address the business issues faced by the Mengasihi start-up. The process begins with making foundational assumptions and gathering internal and external data related to Mengasihi. This includes assessing the current business conditions, analyzing companies operating in the same field, and reviewing primary data owned by Mengasihi. Once these assumptions are validated, a pro forma financial report will be prepared. The pro forma financial reports will undergo a detailed analysis to determine the cost of capital using the Weighted Average Cost of Capital (WACC). As Mengasihi is an early-stage start-up, the focus will be on investments based on financial investment schemes rather than debt or other leverage options. Consequently, the WACC will be calculated by considering only the share price and excluding debt costs. This calculation will provide a basis for assessing financial feasibility. Financial feasibility will be evaluated using various criteria, including payback periods, net present value (NPV), and internal rate of return (IRR). Additionally, a risk assessment will be conducted through scenario analyses to account for future uncertainties. These scenarios will include optimistic, most likely, and pessimistic outcomes, which will be incorporated into Mengasihi's financial reports.

Analysis of Alternatives

Mengasihi's pro forma financial report will include a set of foundational documents: assumptions, a profit and loss statement, a balance sheet, and a cash flow report, all prepared on both a monthly and annual basis. To minimize errors, detailed monthly calculations will be performed only for the first year. The cost of capital will be calculated using the Weighted Average Cost of Capital (WACC), with the cost of debt excluded from the calculation due to Mengasihi's preferred capital structure. Following the determination of WACC, a financial feasibility analysis will be conducted, encompassing the Payback Period, Net Present Value (NPV), and Internal Rate of Return (IRR). To manage project risks, Mengasihi will implement scenario analysis to evaluate three scenarios: the best or optimistic scenario, the most likely or base case scenario, and the pessimistic or worst-case scenario. A pro forma financial report will be prepared based on acceptable assumptions. Once the base case report is established, optimistic and pessimistic scenarios will be developed by adjusting the projected total income.

Initial Investment

Mengasihi will conduct office activities in the first year at Happy Creative Hub in Cisitu, Bandung. This location is strategically advantageous for Mengasihi's production and research and development activities due to its proximity to the industrial center and the ITB laboratory. The office space in Cisitu provides adequate facilities for the four founders of Mengasihi, optimizing the company's profitability in its initial phase. The office will be rented for one year at a monthly cost of IDR 2,800,000, totaling IDR 33,600,000 for the entire year. In addition to office rental, Mengasihi requires various laboratory supplies
to support its research and service production. The company will utilize its cash reserves to stabilize cash flow and cover expenses. The initial investment details are as follows:

### Table 1. Initial Investment

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Unit Cost (IDR)</th>
<th>Total Cost (IDR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freeze Dry Machine</td>
<td>1</td>
<td>Rp64,000,000</td>
<td>Rp64,000,000</td>
</tr>
<tr>
<td>Refrigerator</td>
<td>1</td>
<td>Rp3,000,000</td>
<td>Rp3,000,000</td>
</tr>
<tr>
<td>Packaging (units)</td>
<td>500</td>
<td>Rp12,000</td>
<td>Rp6,000,000</td>
</tr>
<tr>
<td>Marketing Campaign</td>
<td>1</td>
<td>Rp15,000,000</td>
<td>Rp15,000,000</td>
</tr>
<tr>
<td>Office Rent (12 months)</td>
<td>12</td>
<td>Rp2,800,000</td>
<td>Rp33,600,000</td>
</tr>
<tr>
<td>Website Development</td>
<td>1</td>
<td>Rp2,500,000</td>
<td>Rp2,500,000</td>
</tr>
<tr>
<td>Water Activity Test</td>
<td>1</td>
<td>Rp12,900,000</td>
<td>Rp12,900,000</td>
</tr>
<tr>
<td>Legal Fee</td>
<td>1</td>
<td>Rp7,500,000</td>
<td>Rp7,500,000</td>
</tr>
<tr>
<td>BPMO Risk Management</td>
<td>1</td>
<td>Rp15,000,000</td>
<td>Rp15,000,000</td>
</tr>
<tr>
<td>Total Initial Investment</td>
<td></td>
<td></td>
<td>Rp170,000,000</td>
</tr>
</tbody>
</table>

Source: research data, 2024

Mengasihi's funding requirements will be met through various sources, including contributions from co-founders, grants, competitions, and angel investors. The company will explore these options to secure funds without debt or other financial leverage.

**Pro Forma Financial Statements Construction**

Mengasihi's pro forma financial report is crucial for conducting an economic feasibility analysis, as it forms the basis for evaluating the cash flows generated by the company over a specific period. To determine cash flows accurately, it is essential to assess initial assumptions through the income statement and balance sheet. The pro forma financial report will be developed over a five-year projection period, with detailed monthly reports for the first year to minimize the risk of unexpected calculation errors.

The assumptions for developing this financial report will be derived from primary and secondary data. Primary data will come from market research conducted by Mengasihi, while secondary data will include information on the Indonesian economy, the health technology market, and benchmarking against similar companies, such as SGM. Additionally, Mengasihi will gather relevant information from Biopharma.

**Calculate the Weighted Average Cost of Capital**

Mengasihi's operational activities for the next five years will be financed entirely through equity, with no debt. Consequently, the Capital Asset Pricing Model (CAPM) will be used to determine the cost of equity, which will also serve as the Weighted Average Cost of Capital (WACC). The CAPM formula will incorporate unlevered beta, the risk-free rate, and the market return.

### Table 2. Capital Asset Pricing Model

<table>
<thead>
<tr>
<th>Capital Asset Pricing Model</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unlevered Beta</td>
<td>1</td>
</tr>
<tr>
<td>Risk Free Rate</td>
<td>7%</td>
</tr>
<tr>
<td>Market of Return</td>
<td>3.80%</td>
</tr>
<tr>
<td>Cost of Equity</td>
<td>3.80%</td>
</tr>
</tbody>
</table>

Source: research data, 2024

The unlevered beta will be derived from benchmarking against PT Sarihusada Generation Mahardhika (SGM), chosen due to Mengasihi's capital structure, which consists solely of equity. The risk-free rate will be based on Mengasihi's capital structure, which consists solely of equity. The market return will be calculated using the Compound Annual Growth Rate (CAGR) from daily returns on the Indonesian Stock Exchange over the past five years (2018-2024). Once calculated, the CAPM result will represent the WACC value for Mengasihi, as the weight for the cost of equity is 1.00, and the cost of debt is 0%.
Financial Feasibility Analysis

The calculated WACC will be used for the financial feasibility analysis, including NPV and IRR assessments. The analysis indicates that the payback period for Mengasihi’s capital is relatively short, at two years and three months, which meets the project criterion of a payback period under five years. The NPV calculation shows a positive value of Rp997,967,908 over the five-year project period, indicating that the project is profitable. Additionally, the IRR for Mengasihi is 76.83%, significantly higher than the WACC of 3.8%. This suggests that the project is financially viable, as the expected return exceeds the cost of capital. Given these positive results regarding the payback period, NPV, and IRR, the Mengasihi project is deemed financially feasible and aligns with Mengasihi’s strategic goals in the industry.

Table 3. Financial Feasibility

<table>
<thead>
<tr>
<th>Technique</th>
<th>Value</th>
<th>Acceptance Criteria</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Payback Period</td>
<td>2.23 years</td>
<td>&lt;5 Years</td>
<td>Acceptable</td>
</tr>
<tr>
<td>Net Present Value</td>
<td>Rp 997,967,908</td>
<td>Positive Value</td>
<td>Acceptable</td>
</tr>
<tr>
<td>Internal Rate of Return</td>
<td>76.83%</td>
<td>&gt;Cost of Capital</td>
<td>Acceptable</td>
</tr>
</tbody>
</table>

Source: research data, 2024

Risk Assessment

After analyzing the financial aspects of the project, it has been deemed financially feasible. The next step involves conducting a risk assessment to address potential uncertainties. Given that the study is based on various assumptions, a scenario analysis will be performed to evaluate the risks Mengasihi may encounter. This analysis will consider three scenarios: pessimistic, most likely, and optimistic. In the pessimistic scenario, income assumptions are reduced by 5%. This scenario results in a payback period of 2 years and four months, which remains acceptable. The NPV under this scenario is Rp861,747,905, and the IRR is 68.11%, both of which are still within acceptable ranges.

Conversely, the optimistic scenario, which assumes a 5% increase in income, yields more favorable results. This scenario shows a payback period of 2 years and two months, a high NPV of Rp1,135,017,786, and an IRR of 85.40%, all deemed acceptable. The most likely scenario, the primary basis for decision-making, reflects realistic project performance expectations. However, pessimistic and optimistic scenarios are provided for risk mitigation and preparation for potential variations in project outcomes.

CONCLUSION

Mengasihi is a health technology start-up in Indonesia that focuses on breast milk powdering services for personal use. The company offers two main services: direct services to individual customers and business services. To enhance brand awareness among breastfeeding mothers in Indonesia, Mengasihi regularly conducts webinars and breastfeeding classes in collaboration with partner midwives and lactation counselors. As an early-stage start-up, Mengasihi relies on funding from co-founders, grants, and competitions. This reliance on external funding, rather than generating operating profit, can lead to cash flow instability, which needs to be addressed for sustainable business growth. Mengasihi is undertaking a financial feasibility study based on reliable assumptions and internal and external analyses to resolve this issue. This study utilizes payback period, NPV, IRR, and WACC techniques.

The initial investment required for the Mengasihi project is IDR 170,000,000. Three scenarios have been developed: pessimistic, base case, and optimistic. The most likely scenario forecasts a payback period of 2 years and three months, an NPV of IDR 997,967,908, and an IRR of 76.83%. These results are acceptable across all scenarios. The pessimistic scenario assumes a 5% decrease in income from the base case, while the optimistic scenario assumes a 5% increase in revenue. After scenario analysis, the final calculations indicate that each financial criterion is acceptable. Thus, the Mengasihi project is financially feasible and can provide positive returns. The implementation plan for this project will help Mengasihi monitor progress and achieve a sustainable business model.

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